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**PART I.**

ORIGINAL CORRESPONDENCE.

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**ART. I.—***An Essay on the Culture of the Grape Vine, and the making of Wine; suited for the United States, and more particularly for the Southern States.* By N. HERBEMONT, of Columbia, S. C.

“And Noah began to be an husbandman, and he planted a vineyard.”—  
GENESIS C. IX. V. 20

(Continued from page 151.)

*On Pruning, Training, and other work necessary to the Vine, during, and after the third year.*

IN Europe, the Vine is generally kept very low, and in the North, middle, and a great part of the South of France, the common height to which it is ever suffered to grow, is from four to six feet. In Champaign, the Vines are planted as near each other as three feet; and I have seen them even less than two feet. They have there the low and the high Vines. The low seldom exceeds three feet in height, and the high seldom more than five or six. The low Vine produces the better wine, and the high the greater quantity. The low one is pruned down every year to within a few inches of the ground, and the high about eighteen inches; leaving, sometimes, on the strongest Vines, one of the preceding year's shoots, two or more feet long. These they bend, so as to bring the end to the stem of the Vine, or to the stake which supports it, and being tied thereto, it forms a hoop. By this means, many of the buds are made to grow and produce an abundance of fruit; whereas, if the shoot

had been suffered to remain extended at full length upwards, the two or three upper buds only would have produced shoots sufficiently strong to bear fruit, and would have grown to a very inconvenient height, in this mode of training the Vine. Of all the other shoots of the preceding year, only two, three, or four, according to the age and vigour of the Vine, are preserved and pruned down to one, two, or three buds at most, and all the others are totally suppressed by being cut off close to the old wood; but one of them is sometimes left on a very strong and old Vine, to make a hoop, as stated above. There are, in different parts of the country, some particular modes, which differ somewhat from their neighbours; but the evident aim of all, is to allow the Vine to bear only a small portion of the shoots which it produces of itself, and to prune down the remaining ones to very few buds, with the exception always of the one kept for a hoop, of which but few are left in a Vineyard, unless the intention is to root up the Vine in a few years. It is, therefore, of some consequence, to get as much fruit as possible from it before it is extirpated. This is, of course, only done generally in a Vineyard, when the Vines are old and on the decay. For whatever reason these hoops have been left, it is, I believe, invariably cut off close to the stem from which it proceeds at the next pruning.

A Vine intended to be planted in espalier, as, indeed, for all other modes, receives precisely the same pruning for the first, that is, they are all cut down to one good bud, for the sake of obtaining one strong, straight, and vigorous shoot. Remember in pruning, to cut with a slope, and at least half an inch, or more, if practicable, above a bud. When intended for a high Vine, espalier, or bower, this shoot is cut off from one to two feet from the ground, and all but the two upper buds nicely cut off. These, of course, will produce two shoots, which, if strong enough, are both left at the following pruning, and cut-off to within one or two feet from the two year's old wood; that is, these two shoots are treated as the one was on the preceding year, cutting off all the buds but the two upper ones. These must be neatly spread and tied to a frame or trellis prepared for the purpose, and suffered to grow at full length. In this manner proceed, cutting more or less short, leaving more, or fewer shoots according to the strength of the Vine, till it has attained the height intended. During the progress of vegetation, the

interleaves as high as one or two buds above the fruit, are to be cut off, leaving a short stump of about half an inch, so that the bud which it protects may not be injured. All the claspers are also to be cut or broken off, at least high enough to have none to interfere with the fruit. The young shoots are carefully tied with matting, bull-rush, or straw, moistened in water, to render it soft and pliant. After this, the preceding summer's growth is pruned much in the same way as in the low Vines; that is to say, they are cut down to two, three, or four buds each, suppressing altogether, such as are weak, ill-placed, or too crowded; for the Vine must have a plenty of space to spread its large leaves and luxuriant boughs loaded with fruit, so that they do not lie in heaps on each other.

I will not presume to say, that none of these modes of pruning and training the Vines will not answer in this country, particularly with European Vines; but I have tried all these, and many more ways of training without success, particularly on the Vines that succeed and thrive best in this country as yet. I first tried the low Vines tied to a single stake, as the most general practice in Europe; it would not do at all. Indeed, how can a Vine be kept from three to six, or even eight feet high, that will put out shoots in one summer, from twenty to forty, or more feet in length? The espalier mode was next resorted to, and did better, but not well; for the grapes continued to rot, and, also, the very high winds to which we are exposed in this country, would sometimes blow, flat down on the ground, the greater part of my Vines. If this had been the only evil, it might have been remedied, by using stronger stakes, and driving them farther down in the ground, and also by joining the different rows together at the top by laths, nailed from one row to the other. This I did, and my Vines stood; but the grapes continued to rot, some very few kinds excepted.

It is needless to particularize any more of the numerous experiments I made, with a perseverance, worthy of the object in view; but must proceed to detail that which I have finally adopted, having answered my fullest expectations.

Whether I was correct or not, I attributed the rotting of the grapes to insects; but more particularly to the hot steam arising from the earth, which, it seemed to me, scalded the skin of the grapes; and also to the great ardor of our sun, darting its burning rays on the tender fruit, and causing it

to perish. In order to avoid this, I concluded, to train up, as an experiment, a few of my Vines, so as to have them with all the fruit and foliage at the top, running horizontally over head. This brought the fruit and young growth seven or eight feet from the ground, which was considerably shaded by it. A free circulation of the air was not impeded below, for all the foliage was at top; so that there was nothing but the posts that support the frames or trellis above, and the bare stocks of the Vine, in the way. This succeeded so well, that Vines which have been thus trained above seven years, have matured their fruit most completely, and have not had on them one rotten cluster since. This was a perfect victory over the worst enemy I had to contend with; and, although a frame-work for this purpose is much more expensive than any of the other modes of training the Vine, yet the expense is but a trifle, compared with the success obtained by it. It requires many years, however, for Vines to reach this height. The Vines continue to bear fruit while they are growing up to it, after which they are much more productive than in any other manner I have tried or heard of. The grapes hang down from the ceiling, perfectly sheltered from the burning rays of the sun, by the foliage; the air circulates freely among them, and they ripen most perfectly. Two other great advantages are besides obtained by this method; viz. the Vines thus high, are much less liable to be injured by the late spring frosts, and the birds do not prey upon them one-fourth as much as when trained in any other manner; because they have no place to perch upon, to indulge in this repast; and besides, as they fly over, they cannot see the grapes and be attracted by them.

The process of pruning, for this purpose, is much the same as that described above for espaliers. It is, however, necessary to make here some observations upon it. We will suppose a Vine three years old, with one good, strong shoot of the preceding year's growth. If there are two of them, and they are very strong, they may be, each of them, treated in the same manner as if they belonged to two different plants. I shall only speak of one which I think is the best. It has been said, that this shoot is to be cut down to about one or two feet from the ground, and to suppress all the buds except the two upper ones. This is correct, and nothing more would be said about it, was there no danger



that late frosts might kill the two shoots proceeding from these two buds. To avert this misfortune, it is necessary in this country, to let all the buds stand, until all danger of frost is over, and then cut or rub off the superfluous ones; if the two upper ones are uninjured. If they are, however, injured in the least, cut off the shoot below the injured buds, however low this may be. I am in the habit of pruning longer than I otherwise would do, that I may have it in my power to remedy the evil done by late frosts, to which we are very liable here. Fortunately, the upper buds are generally those that grow first, and, if they are uninjured, many of the lower ones will not grow at all; but when you have cut off those that are in the smallest degree injured, (which must be done,) those below which would have lain dormant, very soon put forth, and the Vine will then produce as good a crop, or very nearly so, as if it had not been hurt by the frost. Such is the great resource in this climate. If you leave a young push that has been ever so slightly injured by the frost, the buds below it will not thrive, because the injured one will make great efforts to recover, and will grow; but it will never do well, and will bear but little or rather no fruit.

If the Vine to be pruned is not very good and strong, instead of leaving a shoot as above-mentioned, one or two feet long, it must be cut down to one good bud, which will produce, for the following year, such a shoot, which may be then left of the suitable length. Remember to guard against the late frosts as above recommended. Late pruning has the advantage, that it causes the Vine to put out later. It will, however, bleed very profusely, which is worse in its appearance than in the fact; for I never have seen the Vine injured by it here.

When the Vine is more than five or six years old, it will sometimes put out such a large and vigorous shoot, as to attain sometimes an almost incredible length. At the following pruning, such a shoot may be left from four to ten feet long. I would, in this case, recommend to suppress, at least, one-half of the buds, that the remaining ones may not be too crowded, and put out strong bearing shoots, which they will do, and this long shoot will form thereafter a main branch, and the young shoots proceeding from it, will then be pruned to two, and some to three buds, suppressing totally some of them, when they are too close to each other.

When this is done, it is well, and even necessary, to saw off some of the old branches that seem to be loosing some of their vigour. By this means, your Vine will be, in a measure, occasionally renewed, cover an extensive space of ground, bear every year a great crop, and continue in vigour. I have one, now nineteen years old, that covers a space of seventy feet in length, by an average of fourteen feet in breadth, and is as healthy and well-bearing a Vine as can be seen any where. Suffer, however, your Vines to increase in length but slowly; there is much more danger in aiming at too much, than in greater moderation. If your wood is long and slender, the Vine is too weak to maintain its fruitfulness long, and it does this frequently for some time at the expense of its life.

When you have obtained a sufficient height in your Vines for your purpose, prune carefully, and cut off all such parts as may be in the least unsound or weak, and prune on the young shoots of the preceding summer's growth, to two or three buds; but no more, unless it be such enormous large shoots as mentioned above.

A great deal more might be said to advantage on the subject of pruning and training the Vine; but our object being conciseness, as much as is consonant with the clear understanding of the subject, it will terminate here *for the present*, after describing the manner which is thought the best for leading the Vines upon Mulberry trees, and train them in festoons from one tree to another, as it is practised chiefly in Italy and Spain. It may, hereafter, prove a most valuable mode in this country, when we think it proper to raise Silk as well as Wine. I have never been in the countries where the Vine is thus cultivated, and have no personal experience of it. I shall, therefore, copy this article from a most interesting little book, entitled,—“The American Vine-Dresser's Guide; by *John James Dufour*:”—printed at Cincinnati, by S. J. Browne, at the Emporium Office, 1826—page 173, &c. of the 1st edition.

As I copy from Mr. Dufour's work without his leave, I must assure him, as well as the reader of this essay, that my most candid opinion of it is, that it is replete with sound reasoning, extensive and practical knowledge, and that it is just such a work as I should have expected from the author, from the acquaintance I had with him some thirty years since. I shall say, moreover, that, although I do not agree

with him in several trifling particulars, I recommend heartily his book, of which, I understand, he has made a second edition, to all who wish to cultivate the Vine and make wine; assuring, at the same time, those who may take my advice, that I know of no man more deserving of confidence; his principles and his integrity being of the highest order. I now proceed with my quotation, from his very valuable, though *very badly printed* book:—

‘Now as to bowers, espaliers, or hedge-rows, and hautins. When the Vines have shot the third year, vigorously, four or five branches, you may begin to fill your bowers or espaliers, and let them climb the Mulberry tree, for the hautins. This last way of training Vines, ought to be the most resorted to in the United States, on account of the Silk; and it is of it that I shall next speak. In chapter seven it was said, how Lombardy is all planted; now, it remains to see how those superb festoons are to be obtained. As I never raised Vines that way on a large scale, what I shall say here, is concerning the rules I think the best, and that I shall follow myself, to establish such a plantation, which I have already begun on the shores of Ohio. From fifty to sixty feet distance, rows of Mulberry trees are to be made; the trees in the rows are to be from eighteen to twenty-five feet apart. The same spring in which the trees are planted, Vines are also to be planted six feet from the trees, at each side in the row, two Vines to a tree. Here I shall prefer marcott’s, (layers of the preceding year, with roots to them,) to naked scions,’ (cuttings,) and it would not be amiss, if two feet wide, where the rows have to come, should have been trenched two feet deep, before the planting of the trees and Vines. Secure both trees and Vines from the plough, by good stakes; prune down your Vines as aforesaid, two or three years, or until the Vines have acquired force enough to shoot branches eight or ten feet long in one year. Then, in March, dig a trench from the bottom roots of the Vines to the tree, about one foot deep, if the ground has been trenched, but two feet if not; being careful to save, unhurt, the lowest roots of the Vines, that you may lay the whole plant, from its lowest end in the trench, one foot or nine inches deep, and bending along the stem of the tree the strongest shoot, and prune it down to six inches from the ground, and cut all the others off; cover the Vines in the trenches with only a

‘ few inches of top soil, to hold them down, for the first year;  
‘ that will encourage the striking of a great many roots all  
‘ along the Vines, in the bottom of the trench; when the  
‘ roots are started, or the next year, the trench may be filled  
‘ up. Nurse, and tie to the trees as they grow, two or three  
‘ shoots only, per Vine, of what will grow that summer.  
‘ Next spring, prune one of the shoots up to the fork of the  
‘ tree, and cut off the others, and rub off all the buds shoot-  
‘ ing along the Vine, except three or four of the uppermost,  
‘ that they may be nursed and trained, some along a pole  
‘ that had been previously put on the fork of the tree, reach-  
‘ ing from one tree to another, and the other shoot to be  
‘ left to climb up the branches of the tree at liberty. If  
‘ carefully suckered as the suckers appear, they will grow  
‘ a good deal longer. The next spring, tie along the pole  
‘ the strongest and longest shoot, and if it meet with the  
‘ shoot coming from the other tree, entwine them together  
‘ in the form of a rope, and leave them as long as they will  
‘ reach; cut off every other branch, and rub off, along the  
‘ pole, every second bud, and all other buds any where else  
‘ on the Vine, to encourage the sap to follow the horizontal  
‘ Vine along the pole. If all the buds left along that long  
‘ Vine tied to the pole will strike fruit, the plant would be  
‘ overloaded. I think it will be necessary to sacrifice the  
‘ fruit, by pulling it off before it blossoms, to have the  
‘ quickest Vines reaching from one tree to another; but if  
‘ you will save the fruit, the Vine tied along the pole must  
‘ not be left longer than from fifteen to twenty eyes or buds,  
‘ that eight or ten may grow and bring fruit, one being left  
‘ at every ten or twelve inches, after every other bud has  
‘ been rubbed off, then the shoot at the end of the Vine on  
‘ the pole carefully nursed, and all the others pinched off at  
‘ the third leaf above the fruit.\*

‘ The next year, the shoot at the end of the Vine on the  
‘ pole may be extended ten eyes longer, that five may grow,

\* In this climate, and with strong Vines, if the shoots are pinched off at the third leaf above the fruit, there is almost a certainty that the buds destined for the following year's growth, will put out and produce a second crop which may or may not come to maturity. This will injure the Vine most materially. If this pinching off is done at all, it must be done very late, and when the grapes are nearly ripe, which will, in a great measure, defeat the object of the author. It is best, then, not to pinch them off at all, or to do it at late as possible, and at least five or six buds above the fruit. If the shoots are short, it is much safer not to do it all.



‘after every other one has been rubbed off, and horns of  
‘one or two eyes, made with the shoots growing along the  
‘pole;’ (that is, the young shoots of the preceding year,  
are pruned down to one or two buds; this is what Mr.  
Dafour calls horns:) ‘and so on, every year, until the Vines  
‘have reached the next tree, always making one short horn  
‘where there was one the year before, but never two. To  
‘make a new horn on an old one, the shoot nearest the  
‘main Vine is to be preferred, if equally good; and, in  
‘spite of all care, the horns will acquire some length in the  
‘course of several years; but now and then a sucker or wa-  
‘ter-spout will shoot from the end of the horn, near the  
‘main Vine. That sucker, if not cut too close, will make  
‘a good shoot, on which the horn may be renewed, and  
‘the old one sawed off. When the festoon is finished,  
‘which is, when both Vines from tree to tree have not only  
‘met, but each reached the next tree, there will be no other  
‘care to be taken of them, but the pruning in the spring,  
‘and gathering the fruit; for, against the time the pole is  
‘rotten, the double Vines reaching from tree to tree, will  
‘be sufficiently strong to support themselves, and will make  
‘those garlands and festoons so much admired by the tra-  
‘vellers in Lombardy and Spain.

‘If they should die or break off, a new pole, and the nur-  
‘sing of young shoots from the main Vine near the tree,  
‘will soon fill up the vacancies. It is here supposed the  
‘Mulberry had been pruned in such a way, as to have  
‘branches forking from the main tree at seven or eight feet  
‘high, on which the pole is to rest. When the Vines are  
‘very strong, some of their branches may be suffered,  
‘though sparingly, to run up some outside branches of the  
‘tree, and hang from some convenient place, taking care  
‘only not to impede the gathering of the Mulberry leaves.  
‘There is no apprehension, that the shade in a field thus  
‘planted in rows, even at forty-five feet distance, would in-  
‘jure any sort of crop raised in the intervals; the Mulberries  
‘being stripped of their leaves until the beginning of June,  
‘supposing silk was made, and they would recover their foliage  
‘in due time to afford refreshing shade to the reapers at  
‘harvest.’

The climate of our Southern States is admirably adapted  
to this mode of cultivating the Vine; joining to it the rais-

ing the Silk, and on the same ground, a third crop of any thing else, whether small grain, Indian Corn, Potatoes, Cotton, or Indigo. It is very obvious, that the particular kind of land which I recommend for the culture of the Vine, namely, our poor sandy land is not suitable for this purpose. We ought to be satisfied to reap from this, a rich crop of wine, without expecting any thing else. The vast importance of this culture, (the Vine and Mulberry,) is perfectly sufficient to induce us to yield for it, some of our best high lands, and also some of those rich sandy deposits from our rivers. These are eminently suited to this purpose, and in such lands, enormous profits would necessarily be the result of a plantation carried on with zeal and industry, after having been undertaken with a sufficient capital, under the immediate superintendence of intelligent persons accustomed to it. The procuring of such persons is a difficulty not easily overcome, without encountering, at first, the heavy expense of exporting from Europe families of agricultors bred to this culture. *The prosperity of our Southern States, I venture to say, depends, in a great degree, on such an importation;* and, when a very great public good is to be the result, as it must undoubtedly be, the expense ought to be defrayed, at least in part, by the government of the country which is to receive the benefit. Private individuals of large fortunes, it is true, might do it, and reap the advantages of their patriotism; but few persons, except, perhaps, some who have not the necessary means, are willing to venture on an untried thing \* when the experiment is attended with the disbursement of a considerable sum of money, and the returns not to be expected, under the most favourable circumstances, until after several years expectation. There cannot be, however, any doubt of the ultimate success; for, what is done any where under the influence of particular circumstances, must necessarily succeed fully, if undertaken under similar ones. We shall, probably, feel the truth of this plainest of axioms, when we have suffered a little more in consequence of our infatuation in persisting in overstocking the world with Cotton, whether it will buy it or not; or, indeed, whether it can use or not the quantity we chuse to make for its use!

\* In this country it is untried, but most fully tried in all the eastern world, wherever the climate will permit.

I shall endeavour to treat next of the gathering of the grapes, or vintage, and the making of wine, so as to have it published in time for the growing crop.

(To be continued.)

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ART. II.—*On the Cotton Caterpillar; by Dr. C. W. CAPERS; of St. Helena Island.*

*Noctua Xylina, or Cotton Moth;—Cotton Caterpillar.*

Having, for several years past, paid particular attention to the habits, and witnessed the ravages of this destructive insect, I became desirous of ascertaining its anatomical name and character. For this purpose, I transmitted to Professor Say, of Philadelphia, a small box, containing several of the moths and pupæ, and a vial with caterpillars. Mr. Say, immediately after receiving them, was kind enough to send me the following communication:—

‘I have carefully examined the contents of the box which accompanied your letter. It contained several of the Cotton Moths, which, however, are much injured by the transportation; but, as far as I am enabled to judge by their remaining characters, they constitute a new species, of which I have made the following description.

*Genus, Noctua.—Fabr.*

‘NOCTUA XYLINA.—Olivaceous, tinged with vinaceous; Superior wings, with blackish spot.

*Description.*

‘*Head*, vinaceous, with a small whitish spot before;—*Antennæ*, pale, honey yellow, of moderate length; covered with scales above;—*Labrum*, rounded, small;—*Mandibles*, conic, whitish, with a fascicle of sericeous fulvous hairs on the inner base;—*Maxillæ*, as long as the antennæ; papillaceous towards the tip;—*Palpi*, densely covered with short, equal scales, which are intermixed, rufous and white; second joint much longer than the first; third joint, very distinct, conic, linear;—*Superior Wings*, vinaceous towards the posterior margin, obsoletely olivaceous; a little above,

and partly on the second bifurcation of the post-costal nerve, in an oblique, sub-oval, blackish spot, in which are pale scales, forming almost a double pupil; posterior to this spot in an obsolete, dull, rufous line, reaching the anal margin, near the middle, and the costal margin at two-thirds the distance from the humerus;—behind this line is a less distinct one, and, in some specimens, a still less obvious one towards the base of the wing, accompanied by a small blackish spot. *Inferior Page*, dusky, with a greyish margin, and abbreviated, transverse, rufous line on the costal margin, beyond the middle;—*Inferior Wings*, on the inferior page, with a slight, slender, rufous band;—*Anterior Tibiæ*, with a spine;—*Posterior Tibiæ*, with spines on the middle and at the tip.

‘*LANA*, sixteen-footed—yellow spotted with black; eyes also spotted; beneath, immaculate.

‘*PUPA*, simple, dark chesnut, or blackish; three of the abdominal segments, with dilated, rufous, posterior margins.’

Such is the description given by Mr. Say, which is at once so minute and correct, as to require but little alteration, which shall be noticed in the proper place.

I have not been able to ascertain the exact period when the Cotton Caterpillar first made its appearance in this country; but the earliest intelligence of them which could be gathered from the best Planters, of their destroying the Cotton, was in the year 1800. The accounts given of insects of a prior date destroying the Indigo and other plants, were undoubtedly of another species. In the year 1804, their numbers were so great, as to nearly destroy the Cotton crops; but a storm, which arose on the 8th of September, proved so destructive to them, that they were not seen in any great numbers, as far as I can learn, for many succeeding years; and, although in the course of a few years they were to be found on many plantations, yet, the injury done by them was not very general or great in amount;—and it was observed, that certain plantations, and even certain spots upon it, were the first to be visited by them. In the year 1825, they commenced very early and were spreading rapidly, when they were again cut off by the storm which took place on the 14th of September. Immediately after the storm, I went into the Cotton fields, and could see a small number of the caterpillars still remaining; but in the course of a few days, they totally disappeared, and it was



confidently trusted by the Planter, that the elements would once more relieve him from this devouring insect, and was, in this manner, consoled for the loss sustained; but this proved fallacious, and the following year the crops were more rapidly and effectually destroyed than in any which preceeded it. The earliest notice taken of them was on the 1st of August, at a plantation upon this island, and soon afterwards they were found in various parts of it, and information received, that they were in all directions upon the sea-coast from North-Carolina to New-Orleans.

On the 23d of September, they had consumed nearly all the Cotton leaves, all the upper pods, and some of the latter of a size almost ready to open. At this time they quitted the Cotton plants, and the whole earth seemed to be a moving mass and completely alive, as these insects crawled along on its surface. A few of them remained upon the Cotton stalks, but, in consequence of their want of food, they changed their colour, and became dull and languid, and finally perished. I have never been able to account, satisfactorily, for the sudden manner of these insects quitting the Cotton plant. It was not for the purpose of webbing, for most of them were young; and when they web, it is always on the Cotton stalk, or some neighbouring plant, unless when it is for the winter. Nor was it, in all instances, for the want of food; for, in most fields, there were certain spots which they had left untouched. The only reason which I could assign was, that having consumed the leaves from the Cotton, they were directly exposed to the sun's rays; which, from a meteorological journal I at that time kept, was observed to be very powerful. Whatever the true reason might be, such is the fact, that they appeared to leave the Cotton simultaneously, and in the course of a few days, but a small number of these myriads were any where to be seen. We have, every year since, had them in particular places, but not in such numbers as to do much mischief. Their early appearance in the summer months, much depend upon the temperature of the preceding winter; and this must, of course, influence their numbers, which will be more fully explained when giving a description of the habits of the insect.

The *Noctua Xylina* is an inhabitant of the sea-coast of our Southern country. How it first came here, whether by flight, as some have supposed, or brought in the chrysalis,

a thing much more likely, I am unable to determine. The changes which the different insects undergo through the successive stages of their brief existence, are familiar to most persons. Nothing can be more unlike, than the worm crawling upon the earth or on the plant, and feeding upon its leaves and tender parts, and the moth or butterfly to which it has been converted, expanding its brilliant wings in the air, or passing from flower to flower. These changes form a complete circle, multiplying each time in such wonderful progression, as would soon overwhelm every thing by the increase were there not certain causes by which they are destroyed, and once more brought back within more reasonable limits.

*The Moth* will be noticed the first in the series. It is a small insect of a triangular form, about one inch in length, and is easily distinguished from all others which bear any resemblance, by the peculiar dark spot upon its superior wings. It seldom moves in the day-time unless disturbed, but at night its flight is rapid, and it is often attracted into houses where there are lights. How many days after leaving the pupa state, it is before the moth lays its eggs, or how many of them, I am unable to say.

*The Egg* is of a bluish green, and quite small. It is generally deposited upon the under side of the Cotton leaf, and is about fourteen or fifteen days in hatching. It is confined to the leaf by means of a small filament, attached by a glutinous substance.

*The Caterpillar or Larva*, when hatched, is so extremely minute, as to be scarcely perceptible to the naked eye. In a few days, however, it attains its full size, which is about one and a half to two inches in length, and about the thickness of a crow quill. The colour is not always the same—some being much darker than others. All, however, are marked with black spots upon the back, and lines of the same colour running the whole length from head to tail. The belly is of a light greenish yellow, and when about to web, it swells, losses the spots, and becomes of the same colour as the belly. As I before noticed, the sun appeared to have great effect in changing the colour, or it was produced by the scantiness of the food, as it was only those of a light colour who were able to remain upon the stalks after the leaves were consumed in the year 1825. It is well known, that the caterpillar avoids the sun, and it is princi-

pally in cloudy and damp weather, and during the night that they thrive best, and consume most food. At such times when they are in large numbers, they can be heard at the distance of several yards whilst feeding and moving about on the Cotton plant; and so offensive is the effluvia arising from them, that this is generally the first indication of their presence, and so peculiar is it, that whoever has noticed it once, will rarely mistake it when he again approaches them. Their activity, also, is remarkable. Upon being touched, they double themselves up, and spring to some distance. In feeding, they always commence with the upper leaves; afterwards they take the larger leaves, and finally, the blossoms and young pods, and in 1825 they were compelled to resort to older pods and the bark of the stalks. I have never seen them eat any food besides the Cotton plant. In the year just mentioned, when they had completely denuded the Cotton fields, excepting a few spots as before noticed, and were compelled to quit for the want of sustenance; they took their way through corn-fields, pea, and potatoe patches; and, although they webbed in each, and all of them, indiscriminately, yet the greater part perished on the earth for want of food. We may therefore conclude, that these insects never devour any thing but the Cotton plant; and, that the caterpillar which destroys the corn, the potatoes, peas, and grass, are totally different, as any one may see, who takes the trouble of examining them. The latter resembles it more closely than any other, but it is of a much lighter colour, and although nearly as large around, is not more than half the length. The rapidity with which these insects increase, and the short time it takes to consume a large field of Cotton, is truly astonishing. They not only do material injury to the Cotton plant, by destroying the young fruit, but by the destruction of the leaves, the plant itself is injured, or a new growth caused, which essentially injure the larger pods, causing some to open prematurely, and others, in consequence of a want of sap, to perish without ever expanding.

Added to this, they injure the ripe Cotton by the dirt and filth which they cause, and by webbing in the Cotton itself, as they frequently do, either stain it by being mashed in it, or when hatched, the shell of the pupa remain, and passes through the gin rollers along with the Cotton. In about fifteen days they begin to swell, and rolling up a leaf by

means of filaments which they attach to it, they completely envelope themselves, and in this manner pass into the pupa. It is not a matter of any consequence what leaves they use, but in general they resort to the Cotton leaf, or those growing in its neighbourhood; and it is not an uncommon thing to see several thus webbed on one leaf, or to see a twig where every leaf has one embedded.

The Pupa is of a dark chocolate or chesnut colour. When touched, if alive, it always moves its joints. They remain in this state from fifteen to eighteen days, when the moth makes its appearance. This is during the summer; but when they web, for the last time in the fall, the larva retires to the woods or some convenient place, where, uniting several dried leaves it attaches them to a limb by means of a filament, two or three feet in length, and retiring into its cell, passes into the pupa, which remains in this state until the ensuing spring. The exact period of their hatching, varies according to the temperature of the winter and spring months; and it is undoubtedly for this reason that they retire to the woods, which, being of a more equal temperature, does not expose them so much to the cold, and they are also protected from the violence of the winds.

When these insects first appeared, various attempts were made to destroy them; but so rapid is their increase, that nothing done by the hand of man, has been able to diminish their numbers, so as to be in the least perceptible. Nor is it probable that any thing will destroy them, excepting such causes as have already been related; viz. powerful storms of wind and rain, and their own prodigious numbers destroying their food before the completion of the summer season. The Palma-Christi and Bennè have both been said to keep them away from the Cotton, and I have known them planted for that purpose about the Cotton fields, but without producing any good effect; and I believe the Planters are now satisfied that they are useless.

Mr. Say, in the last part of his letter, observes:—‘With the above-described moths, a single individual occurs in the box of the *Noctua Joter* of Linnè. Whether or not this is a confederate of the *Xylina*, in destroying the Cotton plant, you are able to determine; but I should rather suppose that its ravages are not particularly directed against that plant, and that its presence here is fortuitous.’



This moth was found in the house, and not in the Cotton field, and was merely sent on with the rest for examination. There are, however, several insects besides the *Xylina*, which feed upon the Cotton plant; but, as they are not numerous, little notice is taken of them. I remain your obedient servant,

C. W. CAPERS.

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ART. III.—*On the Cultivation of a Double Crop of Indian Corn and Guinea Corn.*

Sir,—I am of opinion that your paper is eminently calculated to promote the interest of the Southern section of our Union. In these states, so little removed from the tropical, we are favoured with seasons so lengthened, as to enable us to cultivate with advantage, many of the fruits, and most of the grains of that region. To make experiments suited to our favoured situation, and to communicate the results, I conceive to be our duty; to give them publicity, is a task which you have promised to perform.

Among the many advantages which our situation combines, is that of cultivating Double Crops—I mean that of planting another grain on the same ground, soon after the first has attained to some degree of forwardness. The practice of cultivating peas between Indian corn, has long been common in Carolina. This culture is valuable on all high, dry, and sandy soils; and, in such situations, ought to be continued;—but our rich, moist, marley, and clayey lands are unfit for the pea. It is on such soils that I have experimented with the Guinea Corn, and found it to answer my most sanguine expectations. As some of your many readers, as well as myself, have, no doubt, been disappointed with the pea on such lands, I beg leave to communicate my method of cultivating those grains together, and leave it to them to make other improvements.

The Indian Corn is planted on low beds, five feet apart, as usual; and at the final thinning, one stalk allowed to remain at the distance of two feet, or two feet and a half, according to the strength of the land. Directly after the second hoeing, or first moulding of the corn, and with the first shower of rain, the Guinea Corn is planted between every second or third stalk. The holes are usually made

by the negroes with their heels; from six to ten grains dropped in each hole, and covered with their feet. The crop of Indian Corn is not, I think, injured by the Guinea Corn:—on the contrary, my crops of the former, have generally been more abundant than when I allowed two stalks to remain on the beds, at the distance of four or five feet; and when peas instead of Guinea Corn, were planted in the intervals. The produce of Guinea Corn when a regular stand is obtained, I consider equal to half of a full crop. My usual time of planting the Indian Corn, is from the tenth to the last of March; and the Guinea Corn, from the first to the third week in May. At this period, the growth of Indian Corn is very rapid; indeed it is usually in ears by the time the latter corn has attained the height of twelve inches. When the Indian Corn is stripped and turned down, the growth of the Guinea Corn is, in its turn, as rapid. In favoured places, especially if the stripping of the blades has been delayed by rainy weather, you may now perceive some of the latter corn showing its ears. Our seasons are sufficiently long to bring it all to maturity before the usual time for frost:—at times, indeed, I have a second crop of ears, partially ripe, which are left in the field for the birds. It is advisable with this double crop, to harvest the Indian Corn earlier than usual; and no injury will arise from mould or the weavel, if it be shucked out quickly, and sassafras roots be put between the layers of corn. It may be objected by some to this mode of cultivating a double crop of corn, that it interferes with the harvest of a good crop of Cotton. I admit it; but still think the objection entitled to no more, and, perhaps, less weight, than the one against the cultivation of peas between the Indian Corn. The judicious Planter, will, of course, always first secure his most valuable crop; and if a bountiful Providence has given him more good things than he can gather, he will leave the remainder for the use of his creatures. His stock and his game will both be benefited by it. In this way, also, he will derive advantage, and find his table supplied with more and better provisions.

Another advantage is also derived from the cultivation of the Guinea Corn. It yields a very abundant supply of offals, for the resuscitation of the land; and the soil, instead of being injured, is yearly improving.

The species of Guinea Corn which I cultivate, is the whited brown, with bushy ears; the white, with an upright ear will not answer. The latter, I find, scarcely attains maturity by frost, even when planted by itself.

I need scarcely observe, that the Guinea Corn is valuable as food for every animal. Horses, poultry, and negroes are all fond of it; negroes frequently solicit it in preference to other sorts of provisions; and I have myself had it hulled, boiled as rice, and thought it not inferior to the middling sort of that valuable grain.

#### A CAROLINA PLANTER.

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#### ART. IV.—*On the Cultivation of the Sugar-Cane; by* PHILIP CHARTRAND.

"Tivoli, March 22, 1828.

*Dear Sir,*—Feeling a deep interest in the advancement of Agricultural Science, it affords me pleasure to answer your questions respecting the cultivation of the Sugar-Cane. These answers are the result of practice, entirely separate from theory; and, if they should, in the smallest degree, tend to excite the attention of our Planters to this subject, and add, either at present, or at any future period, *one more* to the staples of our State, I shall be truly gratified; conceiving it to be the duty of every individual to contribute his mite, however humble, to the sum of general improvement.

The kinds that I have in cultivation are, the Otaheite, and African or Ribband Cane. I planted early in February 1827, having been prevented from doing so in January, (which is the proper time for planting it in our neighbourhood,) by the extreme severity of the winter of 1826. I consider the Cane as having arrived to maturity at the first visitation of black frost, when it should be cut down and carefully housed, in order to be ground.

I am perfectly satisfied, that if I had had a quantity sufficient to have made it an object, and the necessary facilities for grinding it, I could have produced Sugar equal to New Orleans. Hence, I conclude, that it could be cultivated with abundant success in the vicinity of Charleston.

The soil best calculated for its production, in my opinion, is that of high rice land, with this proviso, that all situations liable to the settlement of water, should be well drained. One advantage arising from a field of Cane, is, that you can make your crop of corn before the Cane attains sufficient height to be injured by it. This I know by experiment, having planted the Cane at such distances, as would admit of the corn being inserted between it. A further benefit resulting from this cultivation, is, that the blades of the Cane make excellent provender. When it has attained the altitude of four feet, you may commence stripping the stalks, and continue the operation till it arrives to maturity; nor will this impede the vigour of the growth, or injure the quality of the Sugar.

I have proved the correctness of this statement by experiment. When in Cuba, I used the blades for this purpose, and have since done so, at Tivoli. I remain, dear Sir, your obedient servant,

PHILIP CHARTRAND.

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*Note.* The above letter was written by Mr. Chartrand, (the proprietor of Tivoli Garden, where we saw the Sugar-Cane growing so luxuriantly last summer,) in reply to a note from us, requesting information from him on the subject. It was received too late to insert in our last number; but it affords us much pleasure in doing so in this number, as it confirms the opinions which we hastily threw together in our note appended to the letter on the cultivation of Sugar, in our last number. It will be seen by this letter, that Mr. Chartrand is of opinion, that the Sugar-Cane can be successfully cultivated in the lower part of this State, and that Sugar can be made. This coming from one who has had considerable experience in the growing and in the management of the Cane, in those climates where it is one of the staple articles of cultivation, is worthy of considerable attention, especially as he speaks after having grown the Cane here, and therefore knows from actual experience, that it will mature in this climate. We observe that the Canes he has cultivated are the same as those cultivated at Onachita, viz. the Otaheite and the Ribband Cane; the latter of



which is said to grow considerably farther North than any other. We therefore again call the attention of our Planters to the subject, and hope that some will make an experiment on the cultivation of this plant, which if successfully carried on, will be of immense importance to our State, and a source of considerable revenue to them.—*Ed. So. Agriculturist.*

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ART. V.—*On the Chicasaw Pea; by N. HERBEMONT, of Columbia.*

“Columbia, S. C March 15, 1828.

*Dear Sir,*—I have duly received the three first numbers of your “Southern Agriculturist,” and am impelled, by a sense of justice, to say, that it contains a quantity of most useful and important matter to Agriculturists in general; but particularly to the lower section of the State;—and, whilst I do full justice to the very great value of the information they embrace, I might express my regret, that they contain so little particularly adapted and interesting to the middle and upper country. I had hopes that our Planters and Farmers would have assisted you in your arduous task, by communicating to you, such improvements or practices in agriculture, which their experience might have found superior to the slovenly and most unprofitable methods in use most generally in our Southern States. Surely they do not form a proper estimate of the advantages of interchange of sentiments, and of spreading widely the best manner of promoting the knowledge most necessary in any country, but more particularly so in this, where it is most wanted. Is it indifference, apathy, indolence, or modesty? It certainly is not want of talents, as it ought to be well understood, that the most useful writing on Agriculture and Rural Economy, are those, that, in point of style, are within the means of the plainest education. A practical farmer detailing, in a clear and plain manner, both his practice and his experience, or those improvements which he may have noticed among his neighbours, is likely to do more good than the most scientific writings are on the subject; because, his details will all be within the comprehension of the generality of cultivators. Who can best speak of all that concerns a

particular art, so as to be best understood by those most immediately interested in it, but those who follow it as their daily occupation? An Agricultural Journal is likely to do more good in a country like this, than all the books and newspapers that can be printed. But before it can attain this most high degree of usefulness, it must be supported; not merely by a number of subscribers, but also by a number of contributors. Without this, whatever may be the talents and the industry of the editor, the sphere of its utility must be restricted to a very narrow compass. No paper has certainly done so much good in the middle States as the *American Farmer*, printed at Baltimore; and, although the talents and the industry of the editor of this most useful paper are of the highest order, its chief advantages must be attributed, in a very considerable degree, to the number of contributors to its pages, by the practical men of the country. As a private citizen of this State, I make this serious appeal to its yeomanry. Shall we remain in comparative ignorance of the art which alone can carry us and maintain us in the highest degree of wealth and independence to which we can attain? Shall we, with our superior advantages of climate and productions, ever remain inferior to the Middle and Northern States? Are there not causes now, sufficient to rouse us from our indifference?

To see, Mr. Editor, your undertaking prosper, is certainly one of my most ardent wishes; for, to the improvements in our agricultural pursuits, must necessarily, and, almost, exclusively depend, not only the prosperity of our State, but also, I fear, its very existence, as an independent member of the Union.

The most powerful auxiliary in agriculture, is, perhaps, judicious and abundant manuring. To this, the most prosperous countries are chiefly indebted for their high prosperity. We, as yet, know but little or nothing of it. It is true, that our Northern brethren have facilities which we cannot command; and a plant to supply their clover, is yet a desideratum with us. Several things have been proposed as a substitute, but practice has not yet pointed to any one fully adequate. Most desirous of promoting this great object, I have sent you, some time since, for distribution among your friends, a small quantity of a small pea, which some person has named "*Chicasaw Pea*." I have cultivated it for some years, and I believe that in it will be found the de-

sired substitute. It is very productive and very hardy. Its top being cured, makes an excellent and abundant fodder. It has the advantage over the common cow-pea in this respect, that it does not loose its leaves in the curing. Not being a runner like the cow-pea, it is better suited to plough in as a green crop for manure. It is planted much in the same manner, except not so thick; and I have generally found that planted in rows, from two to four feet apart, according to the quality of the soil, and planted about eight or ten inches apart in the rows, one single pea in each hole is perfectly sufficient to cover the ground well, and to produce a most abundant crop. It may be planted as late as the middle of June, but the sooner after all danger of frost is over, the better. From about a large tea-spoon-full I had at first, I raised, the first year, upwards of half a bushel of the seed. It grows from two to five feet high, and it would, no doubt, with a proper plough, be turned into a furrow and covered. By this means it would highly manure the land in which it had grown, after having gathered a quantity of seed sufficient for the following year. If not wanted for this purpose, it may be cut and cured for fodder, before the frost kills it. If the quantity I have sent you for distribution is not sufficient, I can send you more. I shall give, with pleasure, a small quantity to any person who may wish to try it, on the condition of a report being made of the experiment to you, for insertion in the "Southern Agriculturist." I am, very respectfully, dear Sir, your obedient servant,

N. HERBEMONT.

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ART. VI.—*Queries on the Culture of Rice*; by WILLIAM WASHINGTON, with *Answers*, by CHARLES MUNNERLYN.

(Continued from page 170.)

"Georgetown, July 30, 1827.

Sir,—Your letter of the 7th of this month, containing Queries respecting the culture of Rice, I have received, and will, with pleasure, and candour, and to the utmost of my information, answer them; but I confess it is through much diffidence, from the circumstance of my not having been so

successful as many of my brethren of the culture have been, as appears from their reports.

1st. What preparation do you give your land before you begin to plant?

*Ans.* I endeavour to get my banks repaired and tight, trunks tight, ditches cleaned; and, as early in the season as possible, the land broken up deep with the plough or hoe, (the plough is preferred.) Before trenching, I harrow with a heavy iron tooth harrow, and prefer hand trenching to that done with the plough. I endeavour to save manual labour, in breaking up and pulverizing the surface, by using the plough and harrow; that labour is accomplished with greater ease and better effect with those instruments than by hand; and I find them such a means of forwarding my work, that I am generally enabled to have my trenching done by hand, and only use the plough for trenching occasionally when behind hand with my work.

2nd. When do you begin to plant?

*Ans.* The latter end of March, so as to use the last spring tides in that month to flow, for sprouting the seed. I begin thus early, because I plant full to the hand, and without an early beginning, could not finish in time; but I am decidedly of opinion, that the best time for planting Rice, is between the 10th of April, and 10th of May. The Rice planted between those periods I think the most productive, and requires less cultivation than that planted earlier.

3d. Do you select your seed, and how do you know the best seed? Do you prefer your seed from the North or South, and how often do you change your seed?

*Ans.* I do select my seed;—my object in selecting is, to have it as free as possible from red or volunteer Rice, and a heavy perfect grain. I am not convinced that a change is at all necessary, while the seed is free of volunteer Rice, and a full perfect grain; or that the effect of climate is of any consequence. The best method that I have found to procure good seed, is to have a small quantity hand-picked, while yet in the straw, to avoid the red Rice, carefully thrashed and planted upon new or rested land;—a few bushels obtained and planted in this way, would yield seed for a considerable proportion of a plantation; let that be planted on the land that is most free of volunteer Rice, and let it be the last of the crop planted, so as to be in time to mature fully before the fall sets in cool to check the per-



fect maturity. Commonly that part of a crop last planted, is clearest of volunteer Rice, by reason of the volunteer being all up at the time of the harrow and hoe passing over the land to put it in a good state for planting, which destroys the volunteer. This done, and this part of the crop planted of good seed, would give an opportunity to sow any quantity of good seed desired for the succeeding crop.

4th. How many rows to the task or quarter of an acre? How many bushels of seed to the acre?

*Ans.* I have my rows fourteen inches from centre to centre, which gives me ninety to the task or quarter of an acre. My fields that are level, and in good order, I plant two bushels to the acre; those that may not be in good order or uneven upon the surface, so as not to admit of flowing to much advantage, I plant two bushels and a peck to the acre.

5th. Do you scatter in the trenches, or, as it is technically called string plant?

*Ans.* In planting, I find it necessary to use great caution to avoid scattering the seed too much; the bottom of the trench in broken or pulverized land being uneven and full of small lumps, after all possible caution to the contrary, will sufficiently separate or scatter the seed as it falls from the hand of the sower. My rows of Rice, I believe, generally cover a space of three inches or thereabout. I think this definition is that of string planting.

6th. Do you point flow, and if so, assign the reasons?

*Ans.* I do point flow, (except on land infested with salt spots,) for several reasons; first, to prevent a crop of grass from coming on too soon;—secondly, to float trash, if any;—thirdly, to protect the Rice from birds;—fourthly, to secure it more effectually from worms, that are apt to breed, when kept dry. In some instances, I have known fields destroyed in a short time by worms, when the tides have been too low, when discovered, to flow. I do not point flow on land infested with salt spots, and on land of this kind I keep on the sprout flow for a shorter term than on other land, because, I think to sob the land, or keep it wet at this period; and, when the Rice is so young, sickens it, and occasions it to die: but I endeavour to hoe, and put on the long flow sooner than when I point flow. Land that is uneven and flows badly from that cause, I flow from four to six days; if the weather is cool and early in the season, six days—if warm, and later in the season, four days. My level

fields that flow well, I prefer flowing as soon as well up from twenty to thirty days. If the weather is cool and early in the season, thirty days—if warm, and later in the season, twenty days. When the water is first put on, let it be deep, to float the trash which should be immediately taken off;—then, by putting a small stake into the trunk door, the water is leaked off until the tops of the Rice show out in the low places—then notch the trunk frame at the water, and keep it as near as possible to the notch;—if from any circumstance it increases above the notch, leak off quick as possible—if it falls too low, add accordingly, until time to dry the field, which should then be done, by a small stake put into the trunk door, until the water gets below the surface. I would recommend this treatment particularly for black or bay land.

7th. How many times do you hoe before you put on the water?

*Ans.* After the point flowing is off as above stated, and the land well dried, and the Rice, if any, fallen down, recovered and standing erect again, it should then be hoed. That which has received four or six days water, I commonly flow again after the first hoeing. That which has received twenty or thirty days water, I keep dry a long time, and hoe twice or thrice; by this time it is fit to be laid by or flowed with the joint flowing.

8th. How long do you keep on the water?

*Ans.* The long water or flowing, as it is termed, put on after the first hoeing, I keep on fifteen or eighteen days. I then dry it, and hoe twice before laying by, a term used for the last hoeing, before the joint flowing, or the putting on the water, which constitutes the joint flowing, which commonly follows immediately after this hoeing. I commonly go over the crop again, (after laid by, as it is here termed,) and hoe the high places, and walk through the water on the flowed parts, and pick the grass that remain after the previous hoeing, which, at this time, shows itself conspicuously; but do not dry it again until fit for the hook.

9th. If in grass, would you put on the water or not? What do you call a good crop to the acre or to the hand?

*Ans.* My main object in flowing, is to destroy or prevent grass. In order to effect this, I observe, when a crop of young grass is up, before it gets too old and strong to be killed by the water, I flow it, and sometimes where the Rice

is clean, I flow to keep it so. If, from the appearance of the Rice, I think the water will not be an injury, if the Rice has a crop of grass already too strong to be killed by the water, (which should never be the case, if the water is at command,) I would recommend the hoe to be used first before the water. If the grass is young, and I am too much engaged to hoe, I put on the water before the hoe, and generally succeed in killing the grass, except on some of the high places. I think from two to three barrels per acre, good cropping; less than two barrels I would call a short crop. I call two and a quarter barrels to the acre a good average crop; and from nine to twelve barrels, or an average of ten barrels to the hand, good cropping—the barrels to weigh 600 lb. nett.

10th. Have you ever ploughed your land whilst the crop was growing, or do you object to it, and why?

*Ans.* I have never ploughed my crops whilst growing, nor am I inclined to think it would succeed well, as the plough could only be made to cut the grass directly before it, and would not save the necessity for the hoe; experience, however, would be the proper test in regard to its utility.

11th. Do you keep your land dry all the winter, or do you flow it?

*Ans.* Land that is new or fresh, and does not require turning up, I flow directly after harvest, to prevent winter grass and weeds from coming up; (this kind of vegetation comes up before severe cold weather sets in.) After severe cold weather sets in, I dry it again, until the stubble is burned; then flow again, until a few days before planting, so as to have it dry at the time of planting. Land that is so low as scarcely to drain below the surface, or but a few inches, I endeavour to turn early, with the stubble on it, and flow as soon as possible all winter, to rot the stubble, and change the water frequently, for the purpose of collecting sediment from it. Land that is not so low as to be difficult to dry, and not so new or fresh as to do without artificial assistance, I keep dry; by doing so, the clay soil looses its adhesive property, and becomes porous or loose; and, in consequence, is easier to cultivate; the black bay, or peaty soil, by keeping dry, it decomposes and becomes better by that reason, adapted to the growth of vegetation. It is a well-known fact, that the dry culture for a year on Rice land, increases the crop of Rice the succeeding year. Upon the same principle, the crop may be improved in a propor-

tionate degree, by keeping the land dry from harvest to planting time.

12th. Have you ever used salt or brackish water, and what has been the result? Have you ever used lime on your land, and how do you apply it?

*Ans.* I have had a good deal of experience with salt and brackish water, and have known fields of Rice entirely destroyed by salt water; but have known brackish water used successfully in making a crop. I think it difficult to define how far, or in what degree the water becomes impregnated with salt, before it proves fatal to the crop,—experience is the only safe guide in the use of brackish water; when it is used, I would recommend it changed frequently. I have never used lime on my lands—my idea (without any experience) is, that it would be attended with little or no advantage. I believe it would be too expensive to apply it, in a sufficient quantity to promote decomposition sufficiently upon the vegetable fibres, or parts of the soil, to produce any good effect; and I further think, that the water would destroy the property of the lime before it could prove serviceable in this way. I am aware that lime is useful on the high land as a manure, but believe it is so only in dry seasons, by attracting moisture from the atmosphere, which would be useless in the Rice field.

13th. How do you know the best time to cut Rice, and what is the task of a labourer in harvest?

*Ans.* As soon as the milk in the bottom grains of the head is dried up, and the grains become hard, it is fit for cutting; this will take place before the colour is fully changed upon that part of the head. I, however, begin to cut before every part of the field is fully ripe, leaving the green spots to ripen, and cut them afterwards. The task for a labourer must be regulated by the distance he has to carry, and the growth of the Rice. The most common task is, a quarter of an acre to be cut, and the same quantity to be tied and carried into the yard. In a field near the yard, I give more, and sometimes, if the field is at a remote part of the plantation from the yard, and the crop of luxuriant growth, I cannot get so much done.

14th. Is there any peculiarity in your preparation of Rice for market?

*Ans.* I believe none. I am particular in having the fans and screens, &c. kept clean and free of chaff, flour, and



the like, in order that they may perform their functions well. I also keep a steady, well disposed cooper continually in the mill, to head the barrels as soon as they are filled, to prevent flour or small Rice being spilled, or thrown by accident into the barrels, which will be done through the carelessness of the mill hands, if not guarded against; and also prevents the dust from falling into the Rice after sifted.

15th. Have you ever cultivated Guinea Corn as a provision crop, and if so, what do you think of it? Do you ever judge by the roots of the health of your Rice?

*Ans.* I have never cultivated Guinea Corn, and know so little about it, as not to be able to give any opinion in regard to it. Nor do I ever look at the roots of my Rice, to form any opinion in regard to them.

16th. Have you ever practised a succession or rotation of crops, and if so, which do you most approve of?

*Ans.* I have planted Cotton upon Rice land, and find that it will grow and produce well the succeeding year after Rice. I have also known other crops tried, but without success, and am of opinion, that none with which I am acquainted, will answer as well as Cotton. Rice land that possesses any ill quality, or much polluted with volunteer Rice, I think could be greatly improved, by planting it a year in the dry culture. I have tried this experiment, and have greatly increased the crop of Rice the succeeding year. Cotton will grow well upon the most ordinary quality of Rice, or tide land, if but in good order. I have also found the above experiment serviceable in getting clear of water-grasses.

17th. Should the river or creek upon which your lands are situated turn salt from a great drought? what mode of attendance would you pursue? would you take in water before it did turn salt, at a time when the Rice was not in actual want, or would you let the water by? Do you ever hoe your Rice, while your fields are filled with water?

*Ans.* If threatened with a drought, I certainly would flow my Rice sooner than I otherwise would, in consequence of it; and after the water became salt, would avoid taking it on, and continue hoeing, hoping for a change in the seasons. I have seen crops after suffering extremely for water or rain, completely revived by a change favourable in the seasons, and ultimately secured; but I am confident nothing could be made with salt water. I am of opinion, that a tolerable

crop may be made with brackish water, if great care and attention is used. I do generally hoe all the hills or high places in my fields, when the water does not flow, and where it is very shallow, while the long flowing is on the fields, and carefully pick all grass that is large enough to get hold of with the fingers, and lay this grass between the rows in the way of the hoe, to be cut when the field is dried.

After having answered all the queries proposed in your letter as above, and upon reflection, thought of something more in my system of management that may be useful, I make this addition for the purpose of suggesting that matter. When preparing to plant, I endeavour to have my fields as dry as possible, and keep them so until I have planted, and it becomes necessary to flow for sprouting. After sowing the seed, I use the cover board lightly, for the purpose of settling the seed down into the trenches; and at the same time pulverizing the lumps that have rolled into them, without removing the ridges or lumps between the trenches, or covering the seed except on the hills or high places, where the flowing is difficult or doubtful; those parts I cover, but as light as possible. Where I have low wet places, I am particularly careful to avoid covering, as the seed in such places does not come up well if covered; and if the cover-board does not place it sufficiently permanent in the trenches to prevent its floating, I make the hands walk or rub their feet on it. Many planters in my neighbourhood, are in the habit of only sowing their Rice, and letting on the water to sprout, without using the cover-board as above described;—but I object to that mode on account of the seed being liable to float when the water is let on, and thereby rendering the possibility of a well-set crop hazardous. A crop planted without covering, or partially so, as I have above described, I think, in consequence of it, comes up quicker and more vigorous, than if more deeply covered. It may be well, however, here to remark, that the seed should be well sprouted before the water is drawn off; and if the weather be cool and dry, so as to prevent the seed from taking root before the surface becomes too dry, a tide or two should be let in to give moisture and prevent the sprout from drying.

On all the Rice plantations with which I have been acquainted, there is more or less variety in the nature and situation of the fields;—some are uneven upon the surface, and

badly adapted from that cause to flowing; such are generally very grassy—some are, from some peculiarity of situation, or accidental circumstance, more slobbed or wet than others. On these two classes mentioned, I have found it more difficult in cultivating and less certainty in producing a tolerable good crop, than on another third class that compose the variety, which is more level and better drained. In order to succeed on the two former classes, I have found it best not to plant them early. I would recommend those classes of fields planted the last of April or first of May, in order that the crop, while young, may escape being sickened and stunted in the growth by cold; when that takes place, it is difficult to get it to grow well, and if planted early, the grass on the uneven land will be extremely troublesome, and the Rice, in consequence of its slow growth and quantity of grass, will require a great deal of cultivation. If planted late, the Rice grows faster, and the grass being up before planting, it may be destroyed at the time of planting, and at so late a period, when the quantity of seed is diminished, as to make the probability of much grass and necessity for much cultivation less. The third class which is more level, and better drained, requires less art and labour to make it produce well, and may be planted first; and, if it becomes sickened and stunted in the growth, it may more easily and effectually be assisted by a proper course of management.

Having introduced these suggestions, in addition to the answers to the queries you have proposed, I transmit them to you, hoping they may be useful. I am, Sir, very respectfully, your obedient servant,

CHARLES MUNNERLYN.

## PART II.

### SELECTIONS.

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#### ART. I—*Bees.*

[FROM THE NEW-ENGLAND FARMER.]

*Mr. Fessenden*,—Feeling anxious to obtain information relative to the management of Bees, I would cheerfully communicate to others, any facts or information I may possess, which might have a tendency to promote an object so interesting and important. Should the following narration and accompanying remarks, produce such an effect in any degree, the object of the writer will be accomplished.

In the N. E. Farmer, vol. 4, page 138, is an account of an extraordinary product of honey, obtained by Mr. E. Williams of Ashfield; in which it is stated, that he so managed a hive of Bees, as to prevent their swarming; and having kept them six years, took them up, and after making half a barrel of metheglin, had 293 pounds of strained honey, and 91 pounds of excellent honey in the comb, making 384 pounds. He also made 47 pounds of bees-wax.

Mr. Williams, some time since, related to me some particulars respecting this extraordinary production, the substance of which I will now state:—He bought a swarm of Bees, of middling size, and having no convenient place near his house, where he could set them, he built a shelter several rods distant, so situated, that they might swarm and go off without being discovered. To prevent their swarming, he added other hives to the original one, in the following manner:—first making a large hive with a hole through the top, three or four inches square, on which he placed his hive of Bees, having a hole two inches square, through the right and left sides of the new or lower hive, at the bottom; then made other large hives, with holes through two sides similar to the first, with *cleets* nailed around each of these holes, so as to come in exact contact with each other when placed on the stand, and in this way connected them together, giving the Bees a chance to pass and repass through the whole range of hives, having them go in and out at the front of



each one, as they found most convenient. By this kind of management, his Bees spread and increased, and soon became a numerous and powerful community, and eventually yielded the extraordinary and valuable production which has already been stated.

In regard to wintering Bees I will venture a few remarks. Many a hive of Bees is undoubtedly lost, merely for the want of proper management;—they are left to starve and die, when a little care and attention might preserve them from destruction, and prevent the loss. If Bees are kept in a dark cellar through the winter, they will spend but very little, if any, of their stock of provisions, as they immediately become dormant, and so remain, until they are removed to a different situation. In this way I have frequently preserved them through the winter, when they would probably have perished within a month, after they were unable to obtain their living abroad, had they been left to take care of themselves.

I once had a swarm of Bees come out late in the summer, and when the season of their labours was over, the crown of a common hat would probably have contained the Bees and all they had collected. I put this swarm of Bees into a cellar, where they lived through the winter; and the next season, they filled their hive and swarmed twice. This may appear incredible to some; but those who doubt the correctness of what I have stated, if they try the experiment, I doubt not will find that I have not overleaped the bounds of truth. I could relate other similar instances, but I deem it unnecessary, as a word to the wise is sufficient.

A FARMER.

Worcester, March 30, 1828.

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ART. II.—*On the Mode of Cultivating Early Potatoes in Denbighshire; by A DENBIGHSHIRE GARDENER.*

[FROM THE GARDENER'S MAGAZINE.]

Sir,—In vol. I. p. 405 of the Gardener's Magazine, R. W. acquaints your readers, how the Lancashire cultivators prepare their early crops of potatoes; permit me to make known the Denbighshire practice.

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The sorts we chiefly cultivate for early crops, are the Foxley, the Nelson, and early kidneys, which are pretty nearly equal in times of ripening. I shall confine myself to the early kidneys, which seem to be nearly like R. W.'s "Lady's Fingers," or "early Rufford kidney potatoe."

We take up all intended for seed next year, before they are ripe, just when the outer skin peels off, and before the stalk or stem begins to wither; they are then laid upon a gravel walk, fully exposed to the sun, for a month or six weeks, when they become quite green and soft, as if roasted, and often much shrivelled; they are then put away, and protected as other potatoes are. In February we examine them, when we generally find every eye full of long sprouts fit to be planted; they are then cut as described by R. W.; but less economically, as we seldom make more than two sets from each tuber,—the eye, or top part, and the root, or bottom part. We plant them as described by him, the eyes upwards in both parts; and we observe, as described by him, that the potatoes from the eye or top sets, are earlier by a fortnight; and that from those planted in the common ground. And let me observe, in by no means the warmest or richest part of our country, the writer had a dish of ripe potatoes at dinner last Whit-Sunday, the 14th of May, and the same every day since, from successional crops, until the 20th of July, when the common potatoe came into use.

You will, perhaps, wish to know, how we secure the successional crops of the same varieties. In February 1818, the writer procured the above varieties from town, and they were planted the latter end of March;—although treated as the other potatoes, they were three weeks or a month earlier than the general crops. Before they were ripe, as before described, every other row was taken up, and the potatoes exposed to the influence of the scorching sun; the other rows were left until ripe, and were laid up with those taken up unripe, care being taken to keep each sort separate. In December they were examined. Every eye of those taken up unripe, had a sprout almost an inch long, the tuber itself quite soft, and all wrinkles had disappeared; while those left to grow ripe, were as hard as when laid up, showing no appearance of vegetation. In February, they were again examined. Those taken up unripe, were covered with sprouts from six to eight inches long; those taken up

ripe, began to show sprouts. Each sort was then cut Lancashire fashion, and planted the same day in alternate rows of ripe and unripe; and also the tops and bottoms of both sorts were set separately in alternate rows. In the beginning of April, every plant from the unripe sets was growing freely; the eye, or top sets, nine days or a fortnight earlier than the others; the plants from the ripe set were only beginning to appear; the eye sets of those were evidently earlier than the bottom. When planted on litter and stable dung, they were all covered with earth, about two or three inches deep, and were not earthed up, as is usually the case.

Brevity being essential to render your miscellany interesting, I will not, at present, enter into further detail, but state to you how they were taken up. The early potatoes not earthed up, grow close round the stalk or stem, like eggs in a nest, and so near the surface, that they may readily be picked off with the finger, leaving the stalk or stem standing uninjured, to produce more potatoes from the runners. From the eye sets of the unripe tubers, we had a full supply every day, for a fortnight, when those from the bottom sets came into use for another fortnight;—at that time, potatoes from the eye, or top sets from the ripe seed came into use, and were succeeded by potatoes from the bottom sets of the ripe seed. Those kept for seed, or the table, were earthed up as usual, and each row produced almost as large a crop as any two of the rows not earthed up—the luxury of an early potatoe being a greater object than the quantity.

The writer has this day examined the potatoes preserved for seed, (taken up unripe,) of the three varieties laid in the garden-house, northern aspect, upon a stone floor, and the sprouts from the eye, on the eye end of all, are nearly an inch long, vigorous and strong.

By earthing up the potatoes, they become three weeks later. I could add much more, but fearful that I shall exhaust your patience, as well as that of your readers, I will now conclude. I am, Sir,

A DENBIGHSHIRE GARDENER.

“November 9, 1826.

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*Note.* We have here presented to us, entirely new views respecting the culture of the Irish Potatoe; and they are certainly worthy of being attended to. Hitherto, we have

ever considered the ripe and large potatoe, as the best for planting; but it appears from this communication, that those who may wish to enjoy the luxury of new potatoes early, should reject the ripe, and only use the unripe for seed, which are here stated to produce tubers fit for use, at least a month earlier than the ripe. Another peculiarity stated, is, that the top sets both of the ripe and unripe potatoes, will produce a fortnight earlier than the bottom ones; and the writer of this article has stated a simple process, by which he has a succession of crops, (at the same time using the same variety,) by merely planting a part with unripe, and a part with the ripe, and keeping the top and bottom sets separate. Nor is it unworthy of notice, that when this plant is not earthed up, that it will produce earlier—but that the crop will be less abundant;—and further, that when the plant has not been earthed up, in the first instance, that the first crop may be picked off, and the plant then earthed up, when it will produce a second crop. We have never attempted this as here stated; but we know, that after tubers have been formed on the vines, sufficiently large for use, they may be removed, and that the smaller ones will continue to grow, and will produce well. We will here give the result of an experiment which we made on this subject, as tending to elucidate what we have stated.

We had some potatoes planted in the month of January, which grew tolerably well. On the 11th of April we examined them, and found many about two inches in diameter, but a great number were small; the majority not larger than a musket ball. As it would have been a waste to dig them in that state, and as there were many which were fully large enough for the table, we determined on taking away the larger and leaving the smaller ones to increase in size, if it should so turn out that the vines were not too much injured by the violence done them; (for at this time we were ignorant of what would be the result, no experiment of this kind having been made public, that we had ever seen.) We accordingly ordered the lower parts of the beds on one side to be dug away, somewhat below where the potatoes grew;—on removing this earth with the hoe, the upper part immediately fell, and either left all of the potatoes on that side of the bed exposed, or covered only with light, loose soil, easily removed with the hand. The potatoes were now selected, and after as much ground was gone over as was ne-



cessary at that time—the earth was returned, and the bed again made up. We had but one side thus treated, leaving the roots and tubers on the other side untouched at that time, to support the plants. On examination we were convinced, that the vines had received no material injury; but, on the contrary, they appeared to us to have been much benefited by the process. This encouraged us to proceed, and we accordingly had the whole of that parcel thus treated. After having gone over all the ground, we returned to the spot from whence we started, and had the earth removed from that side of the bed which hitherto had remained untouched. Thus, each side had the earth removed, the large potatoes taken away, and the beds again formed around the plants. On the 3d of May, the whole bed having been thus treated on both sides, we again examined the spot where we first commenced our operations. We found the potatoes in considerable numbers, but still a majority of small ones, and many apparently not long formed. We were now in as great a dilemma as before, but wanting the ground for other purposes, and knowing that the heat of the sun would soon check their growth, if not entirely destroy them, we reluctantly gave the order for digging them up entirely. The crop turned out remarkably well; but being called away before they were all dug, we cannot state from our own knowledge the result, as to the number of bushels; but, from what we saw of those rows first dug in our presence, we are satisfied that they were not in the least injured by the treatment they had received; and we think the crop taken from the ground at the last gathering, was fully as great, if not greater than would have been produced had the beds not have been touched. Thus, all of those gathered first, may be considered as clear gain in the crop;—certain it is, that the product was greater when the crop was finally dug in, than that of an adjoining piece, which had been treated in the usual manner, and had been earthed up as is usual in the culture of this plant.

If we are asked how we account for this result, we reply, that every potatoe bed will be found about the time the tubers are forming, very compact and hard, and, of course, not so favourable for the growth of the roots or the enlargement of the tubers, as softer ground would be. The removal, therefore, of the earth from around them, and the restoring of it to them again in a loose friable state, whilst it

did but little injury, was of great benefit to the whole plant. The removal of the larger potatoes also, was of some benefit to those left, as they had a greater supply of nourishment afforded by it. Our limits will not permit us to enter into any discussion as to the merits or demerits of the experiment here detailed. We have stated what passed under our own observation, and will leave it to others to determine whether it be worthy of trial or not. Circumstances beyond our control, have prevented us from testing it more fully, which we much regret, as one experiment, although it may have considerable weight, yet cannot be relied on as establishing any particular fact. Should any of our friends have made the same or a similar experiment, we shall be very happy to hear from them, and receive a statement of it, whether it shall go to confirm or contradict the one here given. But to return to the above communication. It will be found that the writer is particular in drying his seed potatoes, and that they are exposed to the heat of the sun for a great length of time, even until they become green. In our climate, we have never been able to preserve as many of our potatoes as would serve even for seed; and we are obliged, in a great measure, to depend on those imported, for our supply. Thus it is, that we can never have, for two successive seasons, potatoes of the same quality; for, if we obtain a good variety this year, it is more than probable, that we shall get a very indifferent one the next; and we must ever be subject to this disadvantage, as long as we shall be unable to save our own seed—and all our improvements in the culture of this root, must consist in producing quantity without regard to quality. We would, however, suggest to our Farmers, the propriety of testing this method of saving seed potatoes. Perhaps by using the small or unripe potatoes, and drying them in the sun as much as is here described, we may be able to save them from one season to another. Should this plan answer, it will certainly be of great advantage to all, but more especially to our Market Gardener's, who will thus be able to preserve any fine varieties they may possess, and adopt any of the improvements suggested or carried on successfully in other places. These are but few of the advantages which the sowing of our own seed will enable us to enjoy. This being the proper season for saving the potatoes for seed, we hope that some of our readers will make the experiment, and inform us of the result.  
—*Ed. So. Agriculturist.*

ART. III.—*On the Situation and Buildings proper for a Dairy.*

[FROM THE COMPLETE GRAZIER.]

*Dairy Utensils.*

A Dairy ought, if possible, so to be arranged, that its lattices may never front the south, south-west, or south-east; and these lattices, which are affirmed to be in every respect superior to glazed lights, may be covered with oiled paper, pasted on pack-thread stretched for that purpose, so as to admit the light, while they will effectually exclude the sun and wind.

As the greatest cleanliness is requisite in the various departments of the Dairy, it will be necessary to have separate apartments, in order so perform its business properly. A *Butter Dairy* ought to comprise three apartments; one for receiving the milk—another for performing the operation of churning—and a third, for containing and cleaning the various utensils. For a *Cheese Dairy*, four rooms will be requisite; viz. a milk room, as before—another, for making and pressing the cheese—a third, for salting it—and a fourth, (which may be commodiously placed as a loft over the others,) for storing and preserving them until brought to market. Where a dairy is confined to the sale of milk, two apartments will suffice, one for containing the milk as it is brought in,—and another for serving it out, scalding the utensils, &c. These various apartments ought to communicate together; and as it is of material importance that the heat be of one uniform temperature, and from fifty to fifty-five degrees of Fahrenheit's thermometer; double walls and a roof have been recommended by Dr. Anderson and others, leaving a space of one or two feet, (Dr. A. prefers four feet,) between the walls, and the lath and plaster. Mr. Marshall, to whose practical skill our former pages have borne ample testimony, advises the walls to be constructed six feet thick, one foot on the inside to be of brick or stone; the outside to be of sod, and the intermediate space to be closely filled with earth. The roof, which should be of thatch, should be at least three feet thick, and should project completely over the walls on each side; and as all these materials are non-conductors of heat, Mr. M. is of opinion, that a Dairy thus built, would, if provided with double doors, preserve

the requisite degree of heat above-mentioned, throughout the year. Further, the Dairy should be neatly paved with stone; or, if this cannot be procured, with red bricks, laid upon a gentle descent, lest any water should stagnate. It will likewise be proper, daily to wash the pavement during summer; and as dairy-houses cannot be kept too cool, it will be of great advantage to build them, if possible, near a cold spring or rivulet.

Further, if a small current could be conducted through the premises, or water were, by means of a pipe, so introduced, as to fall from some height on the pavement, it will be of great advantage, as it will contribute much to preserve the air continually pure, fresh, and cool. But, as the milk itself, when brought in warm, will naturally tend to raise the temperature of the milk-room too high, it is recommended to have an ice-house attached to the Dairy, especially where the advantage of a current of water cannot be obtained. This Dr. Anderson advises, should be surrounded with a double wall, or three sides, with an interval between them like a dairy. The place for holding the ice should be formed of upright posts, lined with wattled work of wands, or close rail-work, leaving a path all round, of two feet and a half in width; round this is to be formed a gutter, to carry off the water dropping from the ice. This mode of constructing an ice-house, Dr. A. pronounces to be not only the cheapest, but also far preferable to the common practice of making cellars under ground, which are both more expensive, as well as liable to mould and rotteness. The structure of an ice-house, attached to a Dairy, would prove additionally profitable, if the Dairy be situated near large towns, where the ice could be sold during summer.

Where the temperature of the milk-room has become affected by the carrying of newly drawn milk into it, it may easily be reduced to the proper temperature, by suspending a small quantity of ice at a considerable height from the floor; and if, during winter, the cold should become too great, a barrel of hot water, closely stopped, or a few hot bricks, placed on the floor or table of the milk-room, will readily counteract its effects. But on no account whatever should a chaffing-dish, with burnieg coals be used, as it will certainly impart a bad taste to the milk.

The *Utensils* of a Dairy comprise pails, sieves, coolers, churns, creaming-dishes, cheese-vats, ladders, and presses:



—to these should be added a Fahrenheit's thermometer, which should be suspended in a central part of the milk-house. Wood is the material usually employed, and of which, in fact, the various utensils ought to be invariably made; lead, copper, or brass utensils, as well as earthenware vessels, glazed with lead, ought, on no pretext whatever, to be used; for the acid which is contained in milk, combines with these metals, and forms a poisonous compound with them. Cast iron, though it does not form a poisonous compound with the milk, is by no means unexceptionable, because it does form a compound that may, in a considerable degree, affect or change the taste and quality of dairy products. Of all metallic dishes, those invented a few years since by Mr. Baird, of the Shotts Iron-works, in Linlithgowshire, are perhaps liable to the fewest objections, as the tin with which they are coated, is acted upon by the acetic acid contained in milk in a very slight degree. These vessels are made of cast-iron, softened by annealing in charcoal, so that they will not break by an ordinary fall; turned smooth in the inside, and laid over with a coat of tin, to prevent the iron from coming in contact with the milk. These milk-dishes are coming into very general use; and Sir John Sinclair pronounces their invention to be one of the greatest improvements in dairy management. They are stated to be kept more easily clean than wooden vessels; and their superior power of conducting heat, cools the milk so rapidly, that the Scottish farmers' wives, who have given them a fair trial, affirm, that they throw up *one-third more cream* from an equal quantity of milk. They are made at the Shotts foundery, from half an English quart, to twenty-four quarts in content, and vary in price from one shilling to nine shillings and sixpence.

All Dairy Utensils ought to be most carefully scoured first with hot water, and afterwards rinsed with cold, and kept in an airy place, in order that every possible degree of acidity may be removed. Should one or two scourings be insufficient, they must be repeatedly cleansed until they become entirely sweet, as the slightest taint or acidity may cause material loss.

\* It has been lately found that slate makes very good milk coolers, and in some of the midland counties, the common flag slate is employed for the purpose.

## PART III.

### MISCELLANEOUS AGRICULTURAL ITEMS.

#### DOMESTIC.

**THE SEASONS.**—It is with regret, that we have again to notice the vicissitudes of our Spring. We had hoped that all danger from frosts had passed, and that vegetation would have been suffered to have progressed without any further check. This, unfortunately, has not been the case, and the severe weather which occurred in the early part of April, has proved fatal to almost all vegetation. In many places, the whole of the Cotton, Corn, and Sugar-Canes, have been destroyed. The gardens have also suffered much, and many of the vegetables which we usually had in other seasons at this time, and from the middle to the last of this month, have been cut off; and the seed from which we must expect our supply, has not long been re-planted. So severe has been the cold, that many which we thought to be hardy, have been killed. The Green Peas which blossomed uncommonly early, and promised to reward the Gardener with an abundant crop, have, in most instances, been so injured, as to produce but very little, if any; and we believe that the greatest part has been entirely killed. On every side, we hear complaints of the weather. The changes have been, in many places, accompanied with hail and snow. We hope, however, that all has now passed, and that Spring will again resume her reign, with her usual genial warmth.

#### *Agriculture of Louisiana.*

[FROM THE WESTERN MONTHLY REVIEW.]

Agriculture here is in its infancy, and in a state of roughness, adapted only to the labour of negroes, and has for its object, little more than to obtain the greatest amount of the staple crop. A great number of rich fruits and valuable productions, congenial to such a soil and climate, have been wholly unattempted. Experiments, except in regard to the best kinds of Cotton, and the best modes of treating it, or the kind of Cane which is most productive, have not yet been commenced on any systematic plan. One or two patriotic and public spirited individuals, have recently attempted to awaken attention to the cultivation of the Tea plant. Benne, an African plant, which yields an oil, it is affirmed, not inferior to that of olives, has been tried, and succeeds well. Indigo was formerly a prime object of attention with the Planters. The cultivation has been, of late, in a great measure abandoned,

either because deemed less profitable than the Cotton crop used to be; or because it is a species of cultivation, considered unhealthy, and fatal to the lands. The Rice yields abundantly, and is remarkably fair. The extent of lands, favourable to the cultivation of the lowland Rice, is almost indefinite; and were not the other grand staples deemed more profitable, no limits could be assigned to the amount that might be raised. At present, very little more than is required for home consumption, is raised in a country where an immense extent of swamps might be profitably devoted to that article.

The lands in this State, bring Tobacco of the finest quality. That which is cultivated in the vicinity of Natchitoches, is said to equal that of Cuba. But the culture is not deemed so practicable, or so profitable, as that of the present staples. \* \* \* \* \*

The kinds of Cotton which are chiefly cultivated, are Louisiana green seed, or Tennessee, and recently Mexican. The green seed has not so fine a staple, but is less subject to the destructive malady called the *rot*. The Mexican is both of a finer staple, yields more abundantly, and has not hitherto suffered from the *rot*. It is getting into common adoption; and the importation of seed from Tampico and Vera Cruz, is becoming a considerable business. Sea-Island Cotton grows well, on grounds that have been exhausted by the continued cultivation of the other kinds. All the species exhaust the soil, and the seed, which accumulates in prodigious quantities about the gins, furnishes an admirable manure for the exhausted soil. The *rot* is a disease, from which the bolls, that begin to form, after flowering, moulder and fall. No series of properly conducted experiments have been made, to ascertain the cause, or to furnish the remedy, against this disease. The causes are inexplicable from any thing yet known upon the subject. In some seasons it is much more severe than others. New lands are less subject to it than old; and hitherto the Mexican, least of all the species. *Rot* is the next grand source of apprehension to Planters, to lowness of prices.

Sugar-Cane is a very rich and abundant article of the growth of Louisiana, raised chiefly on the coast, the shore of the gulf, the bayous Teche, Lafourche, and Palquemine, and some parts of Attakapas, south of 31 deg. It is propagated by cuttings, or slips of the Cane-stalk, called *rattoons*, laid horizontally in furrows, in the latter part of February. The shoots start from the eyes at the joints of the slip. When grown, it resembles the rankest broom Corn, or, perhaps, more nearly, Egyptian Millet. When matured, it resembles, except the seed, spikes or tassels, that species of maize, called at the north, *Carolina Corn*. When it is cut for the mill, or expressing the saccharine sap, they generally cut off something more than a foot from the top, for slips, or *rattoons*, for planting. The rows are planted in rich lands, six feet apart. It requires the richest soil, the vegetable mould

of which ought to be, at least, a foot in depth. There are three or four varieties or species in cultivation here, as the African, the Otaheite, the West Indian, and the Ribband-Cane. The Otaheite grows luxuriantly, and ripens considerably earlier than the West Indian, but is said to contain saccharine matter in comparison with that only as two to three. The Ribband-Cane is a new and beautiful species, so called, from its being marked with purple and parallel stripes, that have on the stalks the appearance of ribbands. We have seen it of greater size and height than any other species, and it is said to be highly charged with saccharine juice. Its grand advantage over the other kinds is, that it does not require so long a period for ripening, by some weeks, as either of the other species. It can, probably, be raised two degrees farther north, than any other kind yet attempted. They are making trials of this Cane in Opelousas, on Red river, and about Natchez. We have seen it this season in a great number of places in those regions. It is not unlikely that it will become acclimated considerably north, even of these points. Cane is understood to be productive in China, where the frost is much more severe than in any places where it has been attempted in this country. When the habits of plants, in undergoing the process of naturalization to the climate, are better understood, it may be, that this rich and most necessary species of cultivation will be extended to points of a more northern latitude, than have yet been even in contemplation. The disadvantages of Ribband-Cane, (for every thing has its disadvantages,) is, that it has a harder rind, or bark, than the other kinds, and will require rollers for grinding it, to be driven with steam, instead of horse power, which is generally used for grinding the common kinds.

The Sugar-Cane is a very hardy plant, not liable to the diseases either of Cotton or Indigo. It is cultivated much in the same way with maize. It ripens according to the season it experiences. Rains retard, and drought accelerates its maturity. The abundance of the crop depends upon the number of joints in the stalk that ripen before the frost, so as to have the proper saccharine juice to granulate to sugar. A slight frost favours that fermentation which is necessary to the production of the sugar from the sap. A severe frost at once destroys the vegetation of the Cane. The Cane lies a short time after it is cut, to favour this fermentation. It is then passed between two iron cylinders, by which the Cane is crushed, and the sap forced out by expression. It flows into boilers, and the process is simply that of evaporation by boiling. The crop, when in growth, has great beauty of appearance. The sap is so rich in the stalk of the Cane, as to have almost the gummy consistence of a syrup; and sugar exists there as nearly in a concrete form, as it can in solution. An acre of good ground, properly tended, will yield, in common years, 1200 pounds, besides molasses.



It was formerly a question in this State, which was the most profitable crop; this or Cotton? Accurate tables, giving the number of hands, the amount of expenditure, and the average value of product from each hand, for a number of successive years, have been published. From them it would appear that Sugar was the most productive crop, even when Cotton bore a better price than at present. The cultivation is diminishing in the islands. That of Cotton seems to be every where increasing. There is a great extent of Sugar lands not yet brought into cultivation in this State. We do not, as yet, grow enough for the consumption of our own country. There seems to be every inducement then, to extend this cultivation in Louisiana, and wherever there is any probability that it can be successfully cultivated; and it is an omen for good, that the Planters all over this State, are turning their attention to this species of culture.

No cultivation in our country yields so rich a harvest. General Hampton estimates the value of his crop of the present year, at one hundred thousand dollars. A French Planter at Attakapas, with even seven hands only, has sold his crop for twenty-five hundred dollars. Planters, with a moderate force, have realized ten thousand dollars for their crop of the past season. The molasses is calculated to pay the plantation expenses, and to leave the Sugar net profit. The work is admitted to be severe for the hands, requiring, when the process of making Sugar is commenced, to be pushed night and day. It has been a general impression, even in this State, where the truth ought to be best known, if it is so, that Sugar could not be made to profit, unless the Planter had a large force and capital, and could rear expensive sugar-houses and machinery. This general impression has hitherto deterred small Planters from attempting to cultivate the Cane. But it has recently been received as a fact, amply demonstrated by experiment, that Sugar can be made to profit with as small a capital, as is required for commencing a Cotton plantation.

Louisiana is the home of the peach and the fig-tree, the orange and the grape. No fruit is raised with greater ease or abundance than figs, in this State. A slip, stuck in a proper soil, soon becomes a fruit-bearing tree. There can be no doubt that the olive will flourish. The orange trees were killed to the ground in the severe frosts of the winter of 1823. They are beginning to be in a bearing state again. Such is a sketch of the staple of Louisiana, which has the most productive agriculture, according to the number of hands employed, and acres tilled, in the United States, or perhaps in the world. It is believed, that no country, with the same population, exports of its own growth, articles of as much value, as the State of Louisiana.

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*Profits of a Vineyard.*—Colonel Aldum, near Georgetown, D. C. from two and a half acres, in 1826, cleared between eleven

and twelve hundred dollars; and, on an average of ten years, after the three first, has found the vine to yield four hundred gallons to the acre.

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*Silk, from Worms fed on the common country Mulberry.*

“Fancy Grove, Sangarno, County Illinois, February 29, 1828.

MR. SKINNER,—*Sir*,—Knowing your friendly disposition towards encouraging domestic economy, and home manufacture, I have ventured to enclose to you a specimen of raw Silk, made from the black Mulberry, which grows in great abundance in this State. We have manufactured a quantity of it into sewing silk of different colours, which has been tried by a number of tailors, and pronounced to be of the best quality. There are no persons here acquainted with silk raising, sufficiently to judge of the difference between this, and such as is made from the white Mulberry.

We can make any quantity of this kind, and I am fully of opinion, that a family, where there are a number of young boys and girls, with some one to manage the business properly, can clothe themselves with Silk, and with less labour than with cotton or flax. Your's, very respectfully,

S. STILLMAN.

[This sample, like all the others we have seen of Silk, from worms fed on our country Mulberry, is superior to imported Silk.]  
—*American Farmer*.

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*Cotton Seed Whiskey*.—This modern discovery, like many others, was accidental. The gentleman, a Mr. John Gray, of Georgia, in a careless moment, suffered his cotton seed and corn to be thrown together; and corn being scarce, he threw the cotton seed with the corn into the brewery. The result, viz. the quantity of whiskey, arrested his attention. He then mixed half and half, and finally sold without any detection in the taste. He then went on to try all cotton seed, throwing a peck of meal into each hogshead, to cause fermentation. This produced a vigorous extrication of gas; and a large quantity of oil, bland, and of drying quality, well suited for painting, was produced; and the quantity of whiskey was extraordinary from the cotton seed.—*Alabama Journal*

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*Teasels* are becoming quite an article of trade. A single wool-len factory, in the flourishing and active manufacturing village of Sommersworth, N. H. which consumes annually, 100,000 lbs. of wool, uses 900,000 teasels a-year, worth, at \$3 a thousand, \$2,700.—*New-Eng. Farmer*.

## FOREIGN.

*Cheap and efficacious Manure.*—Raise a platform of earth on the head-land of a field, eight feet wide, one foot high, and of any length, according to the quantity wanted. On this first stratum of earth, lay a thin stratum of lime, fresh from the kiln; dissolve or slack this with salt brine from the rose of a watering pot; add immediately another layer of earth, then lime and brine as before, carrying it to any convenient height. In a week, it should be turned over, carefully broken, and mixed, so that the whole mass may be thoroughly incorporated. This compost has been used in Ireland; has doubled the crops of potatoes and cabbages, and is said to be far superior to stable dung.—*Gardener's Mag.*

*Thrice Blooming Apple.*—In the 6th vol. of the London Horticultural transactions, is a communication from M. Thouin, giving an account of the *Calville Rooge de Micoud*, an apple which affords three sets of blossoms and fruit in a season. The blossoms appear in April, June, and August. The first crop of fruit ripens in August; the second crop immediately succeeds, and lasts till the last of October; the third are picked after frost, and ripen in the fruit room.—*New-York Farmer.*

*Experiments on Smut.*—Some curious and interesting experiments of the Smut in Wheat, have been made, during the last two years, by Dr. Pew, a highly respectable physician of Sherborne, in Dorsetshire. In a glass of rain water were put fifty smut balls, which, on the tenth day, exhibited an immense number of minute animalcula, which, on examination with a microscope, proved to be of two kinds; eel-like insects, and very minute creatures, destined to be the food of the former. The eel-like insects amounted to about thirty; the minute animalcula to several millions. In the course of a month, Dr. P. witnessed three or four generations of the eel-like insects, and the others were continually regenerating; but some cold nights about the middle of October, induced torpor, and finally death, to both kinds. "From this last circumstance, the Doctor concludes, that severe winters, attended with much frost and much snow, lying long on the ground, must be the most effectual preventative of smut for a time, sensible as these creatures appear to be of cold. It seems also, that if old wheat be sown, even though infected with smut balls, little or no smut may be produced; which is accounted for on the same principle, that the eggs of hens and other birds become addled by long keeping, so those of the smut animalcula fail to hatch. The Doctor finds that the very soil, at length, becomes infected with the smut balls, and that though pure and clean wheat be sown, smut on these lands will be produced. He proves, also, that lime, used hot from the kilns, in great quantities, viz. two hundred or three hundred bushels per acre, effectually destroys the infection, and frees the land from smut."—*Gar. Mag.*

## AGRICULTURAL WORKS.

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**The AMERICAN FARMER**; containing Original Essays and Selections on Agriculture, Horticulture, Rural and Domestic Economy, and Internal Improvements; with illustrative Engravings, and the prices of country produce. John S. Skinner, Editor. Price, \$5 per annum. This Journal is published weekly, at Baltimore; and, as the title announces, embraces a great variety of information. It has reached the tenth volume; and, perhaps, there is no Agricultural Journal which is better supported, and its circulation is very extensive. It is a popular work, and fully merits the high commendations bestowed on it.

**NATURE and REASON HARMONISED**, in the **PRACTICE of HUSBANDRY**. By the late John Loran. Philadelphia. Price, \$3.50. In this work, the author appears much more desirous of combating the received opinions of Agriculturists and of overthrowing them, than of establishing any theory of his own; and if he leaves us in doubt very often, what we ought to do; yet, it is certain, that he has, in many instances, exposed the absurdity of the theories advanced, and opposition to Nature and Reason of many of the practices of some of the most distinguished Agriculturists.

**The GARDENER'S MAGAZINE, and REGISTER of RURAL and DOMESTIC IMPROVEMENT**. Conducted by J. C. Loudon. London. Price, 3s. 6d. per number. The Gardener's Magazine is published every two months, and contains about 120 pages. It is a most valuable work, and which every person who may be desirous of knowing the improvements of the age in this department, should be in possession of. To the mere grower of esculent vegetables, it will be of but little use; but to the scientific Horticulturist, it will prove not only a source of much gratification, but will be also of immense service to him in his pursuits.

**L'ART DE CULTIVER LES MURIERS**. By the Count Charles Verei; and translated from the Italian, with Notes. Lyons. 8vo. p. 87.

"The Cultivation of the Mulberry appears to be as popular on the Continent as in Britain. The present work treats on the Management of the plants, from sowing the seed, or planting the cuttings of the Mulberry, to gathering the leaves from the full grown trees. It is favourably spoken of by Count Dandolo, by Deby, and others, who have written on the subject."—*Gardener's Magazine*.